

WHAT CONSTITUTE SCIENTIFIC DATA FOR THE STUDY OF BIRD DISTRIBUTION?¹

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THE student of bird distribution is now having placed before him not only far greater amounts, but also wholly new types, of data. Hence he will do well to occasionally stop and re-examine the materials with which he is constructing his account of bird distribution. If he were to fall into conversation with some of those zoologists who deal with mammals, reptiles, or amphibians, he would find that when they work out and map the distribution of a species they use only *specimen* records. If he were then to try to tell the mammalogist, for example, how much better we ornithologists do things, the mammalogist, if he knew his literature well, would surely read to him the following passage published in 1928 by Joseph Grinnell, probably the most distinguished student of bird distribution America has produced:

“With the great majority of the species of birds and mammals, of reptiles and amphibians, there is only one acceptable basis for determining presence and that is the taking of actual specimens and the preservation of these permanently, with attached, signed statements of locality and other circumstances of capture. So-called ‘sight records,’ even of the commonest birds, have proved over and over again to be wrong. Many, many species and subspecies are difficult enough of systematic determination with actual specimens in hand; especially is this true as regards the ultimate taxonomic unit. . . . the subspecies. The results of distributional study to be valid must be made on the basis of accurate identifications of materials; and these materials must be preserved so as to permit of repeated verification as refinements in systematic analysis accompany increased experience. Hence the research museum, functioning as the repository for this accumulating evidence. Popular testimony, impression, the sight record, have, perhaps, their place in the ‘romance’ of natural history; but this province belongs to literature and not to science.” (“Presence and Absence of Animals,” *University of California Chronicle*, 30, 1928:429–450. Reprinted in “Joseph Grinnell’s Philosophy of Nature,” 1943.)

Certainly these are sound principles to follow in dealing with most land vertebrates. For example, most mammals, reptiles, and amphibians are not meant (so to speak) to be identified at a distance, nor primarily by vision. They identify each other only at rather close range, and then mainly by scent or sound, neither of which can be received really well by man. Indeed

¹Presented October 21, 1952, at the meeting of the American Ornithologists’ Union at Baton Rouge, Louisiana. Those interested in this topic should not fail to read also Ludlow Griscom’s excellent discussion in the *Proceedings of the Linnaean Society of New York*, Nos. 63–65, 1954:16–20.

some mammals cannot be positively identified even by the expert mammalogist until he examines the teeth with a dissecting microscope.

But we may be justified in treating birds somewhat differently from the way we treat other vertebrate groups. Birds, by and large, readily recognize each other at a distance, and primarily by vision. Man (if we include field glasses as "factory equipment") has finer vision than any other mammal and is therefore especially equipped to act as a bird among birds and to distinguish the various species at a distance. Further, the ornithologist has the advantage of what may be called the "Roger Peterson effect," for, thanks to Peterson, identification of birds in the field has become a science in itself.

Early in the century, before the era of scientific field-guides and good binoculars, the careful ornithologist was almost wholly restricted to the use of specimen records, but there has been a great change. The shift came slowly at first. Single notes by ornithologists of repute began to appear in the *Auk* and other major journals, reporting a sight record of some strikingly plumaged bird in a region where it had not previously been recorded. These notes were distinguished by their wealth of supporting detail. The author recorded how near the bird was and how long he watched it, adding that he had become familiar with the species elsewhere and that he was aware at the time of observation of the rarity of the occurrence. The permanent scientific value of the note was also safeguarded at every step in its preparation for publication. The note was sent to the editor, who probably returned it to the author at least once, calling his attention to ambiguities in expression and to certain details that it would be desirable to add. Then the note was returned to the editor, set in type, and the proof sent to the author for checking. When it finally appeared in print it was almost equal in value to a specimen record.

A major influence in the changing situation in American ornithology was the development of the "Season Report." Frank Chapman, who originated so many things in ornithology, introduced the "Season Report" in his popular journal, *Bird-Lore* (1917) in order, he stated, "to give a general idea of the more unusual features of each season in different parts of the country" and "to accumulate a valuable fund of data on the fluctuation in the abundance of species."

The contributors of the early reports were:

Boston region—Dr. Winsor Tyler

New York City region—Charles H. Rogers

Philadelphia region—Julian K. Potter

Washington, D.C., region—H. C. Oberholser

Oberlin region—Lynds Jones

Soon he added:

Denver region—Dr. W. H. Bergtold

Minnesota region—Dr. T. S. Roberts

The reports were brief (usually but half a page) and were based on the direct observations of these recognized ornithologists and the field workers they personally knew. (Potter, for example, would quote Witmer Stone, or Oberholser would quote a young man named Alexander Wetmore.)

The "Season Report" section of *Bird-Lore* was immediately popular. More regions were added, and regional editor followed regional editor. Much information valuable to ornithology was printed. Indeed, T. S. Roberts published his collected reports of 20 years in book form ("Logbook of Minnesota Bird Life," 1938).

The section grew so large that it had to be published separately as a supplement; and soon it became a separate journal, *Audubon Field Notes*, under the joint auspices of the National Audubon Society and the U.S. Fish and Wildlife Service. It is now a journal of over 300 pages to a volume and treats 19 different regions. Furthermore, the idea has so spread that we have "Season Reports" (under one name or another) in many State and other local bird journals.

These regional reports have—almost necessarily—come to be handled by an ever larger and ever shifting group of regional editors, who are not always the most critically minded scholars in the field. Further, the editors (and, in turn, their contributors) are increasingly under pressure to work fast and get their records and summaries in before a prescribed deadline. (It approaches the pressure under which newspaper men work!) Records are rushed in, combined and summarized as quickly as possible, and hurried on to the central editor. There can be no submitting of printer's proof to contributors; nor, as a rule, any correspondence about even questionable records. The tendency is to go ahead and publish a given record "for what it is worth" (a defense I have actually heard many times!). Under such circumstances the record may be worth exactly zero; or, indeed, it may have a negative value, for it may seriously mislead the student of bird distribution. Worst of all, there is no way of distinguishing good records from bad, nor of correcting the mistaken records afterward. (Though a specimen record may involve an error in identification, the specimen remains as a basis for correction.)

Thus as the acceptance of the sight record became more general, safeguard after safeguard was dropped and the use of these sight records became less and less defensible from the point of view of scientific method.

Noting the number of patent errors appearing in print which related to my own immediate geographical area, and noting that other writers were

beginning to use these "records" in their serious publications, I began to wonder how the "Season Reports" should be treated—and indeed how the editors *intended* that they should be treated. Therefore I wrote some of the editors and asked in what light they themselves viewed these publications. I was dismayed to find that some editors had not even thought about the matter! Others cheerfully replied that these records they were putting in print were "scientific data" to be treated at their face value. However, I am glad to say that Mr. Chandler Robbins, the editor of the leading journal in this field, *Audubon Field Notes*, sent me a thoughtful, critical statement:

"Regarding the scientific value of observations reported in *Audubon Field Notes*, I consider that they may safely be used collectively, but that individually each must be judged separately on the reputation of the observer. In many areas the compilers know most of their regular correspondents personally, and so they screen out dubious material before writing their reports. A few deletions on grounds of questionable validity are made in editing the reports in this office; and we make a practice of publishing all corrections that are brought to our attention (except for misspellings or typographical errors which do not alter the details of observations).

"Obviously, when we publish thousands of observations each year without providing details of each, this material cannot be considered of equal scientific value with detailed records published in the *Auk*, *Condor* or *Wilson Bulletin*. However, since the observer's name is given with almost every occurrence, contemporary ornithologists interested in confirming any given record can get further details by corresponding with the regional editor, a local compiler, or the observer himself.

"In summary, I would say that: (1) in mass, *Audubon Field Notes* records may be taken at face value; (2) individually, sight records should be evaluated either by the reputation of the observer, or through further inquiry; (3) I consider a report of a specimen record in *Audubon Field Notes* as on a par with a specimen record in the *Auk* as far as validity is concerned; (4) rarities on Christmas Bird Counts are open to more question than are unusual reports in the other issues" (quoted with Mr. Robbins' kind permission).

We then come to the question of what can be done to improve the general situation.

It is clear that we need a widespread revision of editorial criteria. And here I am referring not only to the "Season Report" category but to our general scientific literature on birds which appears in serial publications. Let me illustrate by mentioning a recent issue of a very excellent British bird journal. There we find under the heading, "American Pectoral Sand-

pipers in England in 1951," a half-page note with no author's name attached, giving the dates and places of five new "records" of the Pectoral Sandpiper (an extralimital species there) with no details whatever, nor even a statement whether the birds were collected or merely seen. In short, we have gone so far that we now even forget to state whether we are talking about sight records!

While we all recognize the great value of the "Season Report" as an irreplaceable record of the mass movements of birds and the fluctuations in their numbers, the scholarly investigator of bird distribution dares not rely on any individual record that appears there without checking it by correspondence and by using every other safeguard he can devise. In the meantime, editors can help ornithologists greatly by raising standards in every possible way and by so editing that the "Season Report" will deal more exclusively with the general population changes and movements, which it alone can trace and put on permanent record, and less with the individual sight record.

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SEPTEMBER 1, 1955